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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/847,395

05/03/2001

Marc M. Rehfeld

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06/04/2004

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EXAMINER

FERGUSON, LAWRENCE D

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 06/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,395

Applicant(s)

REHFELD ET AL.

Examiner

Lawrence D Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,7 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,7 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed March 15, 2004. Claims 1, 3, 7 and 11 were amended, claims 2 and 10 were cancelled and claims 14-18 were added rendering claims 1-3, 7 and 11-19 pending. Examiner regrets the withdrawal of the previous objection of instant claims 2-3 and 10-11 to further prosecute the claimed invention.

Claim Rejections – 35 USC § 103(a)

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 7, 11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marc Rehfeld et al. (U.S. 5,478,615).

Rehfeld '615 discloses a laminated glazing with a plastic interlayer having properties of acoustic insulation (column 7, lines 28-35) where the glazing has two glass sheets having an interlayer (column 7, lines 34-35) and mechanical properties (column

2, lines 55-57). Rehfeld '615 discloses the interlayer is a polymeric film (column 4, lines 59-65). Rehfeld discloses the interlayer has a critical frequency (column 2, lines 13-15) and comprises PVB (column 4, lines 53-56). The reference discloses a bar of 9 cm long and 3 cm wide, where the laminated glass comprises glass sheets of 4mm thick (column 5, lines 44-48). Rehfeld does not explicitly disclose the intermediate thickness is equal to $d_{ref} J_{ref}/J_c$, or the critical frequency value. The thickness of the intermediate layer and critical frequency value are optimizable features which directly affect and enhance the damping property of the laminated glass pane by improving the durability and flexibility of the laminated glazing. It would have been obvious to one of ordinary skill in the art to optimize the intermediate layer because discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215. Additionally, Rehfeld '615 discloses varying the glass thickness (column 2, lines 1-10). Rehfeld does not explicitly teach the loss factor, shear modulus or critical energy value. These features are directly related to the specific laminated glazing materials used. Since the reference uses the same intermediate layer with the claimed acoustic property criteria, the loss factor, shear modulus and critical energy value would be expected to be the same as claimed, absent a showing of unexpected results.

Claim Rejections – 35 USC § 103(a)

4. Claims 1, 7 and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Friedman et al (U.S. 5,908,704) in view of Hamdi et al. (U.S. 5,598,669) as evidenced by EP 0 100 701.

Friedman discloses two protective glazing layers with at least one interlayer having at least one reinforcement layer embedded in the polymer interlayer (column 14, lines 11-16) where the interlayer is fiber (column 14, lines 27-29). The reference discloses the interlayer is a polymeric film (column 1, lines 10-11 and column 2, lines 31-48) and the laminate comprises mechanical strength (column 3, lines 7-15). Friedman discloses additives incorporated in the laminate to achieve special properties in the protective glazing (column 4, lines 50-53) such as acoustic insulation. Friedman does not explicitly disclose the glass thickness or intermediate thickness is equal to d_{ref} J_{ref}/J_c . The thickness of the intermediate layer is optimizable and directly affects and enhances the damping property of the laminated glass pane. It would have been obvious to one of ordinary skill in the art to optimize the glass and intermediate layers because discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215. Friedman does not disclose the acoustic property criteria of the intermediate layer.

Hamdi discloses the teachings of EP 100701 B1, which teaches an insulating glazing including one or two laminated elements whose interlayer is such as a bar 9 cm in length and 3 cm in width, consisting of a laminated glass comprising two glass sheets

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4mm in thickness joined by a 2mm resin interlayer having a critical frequency which differs at most by 35% from that of a glass bar having the same length, width and thickness of 4mm (column 1, lines 40-46). It would have been obvious to one of ordinary skill in the art to include the acoustic property criteria disclosed by Hamdi as evidenced by EP 100701 because Hamdi teaches it improves the quality of the laminated glazing (column 1, lines 47-51). Neither reference explicitly teaches the critical energy value. This feature is directly related to the specific laminated glazing material used. Since the references use the same intermediate layer with the claimed acoustic property criteria, the critical energy value would be expected to be the same as claimed, absent a showing of unexpected results.

Response to Arguments

5. Rejection under 35 U.S.C. 103(a) as being unpatentable over Marc Rehfeld et al. (U.S. 5,478,615) is maintained due to further consideration of the reference teaching the claimed acoustic property criteria and Friedman et al (U.S. 5,908,704) has been upheld with the incorporation of Hamdi et al. (U.S. 5,598,669) as evidenced by EP 0 100 701 which teaches an insulating glazing including one or two laminated elements whose interlayer is such as a bar 9 cm in length and 3 cm in width, consisting of a laminated glass comprising two glass sheets 4mm in thickness joined by a 2mm resin interlayer having a critical frequency which differs at most by 35% from that of a glass bar having the same length, width and thickness of 4mm (column 1, lines 40-46).

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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Lawrence D. Ferguson
Examiner
Art Unit 1774



ELIZABETH MULVANEY
PRIMARY EXAMINER